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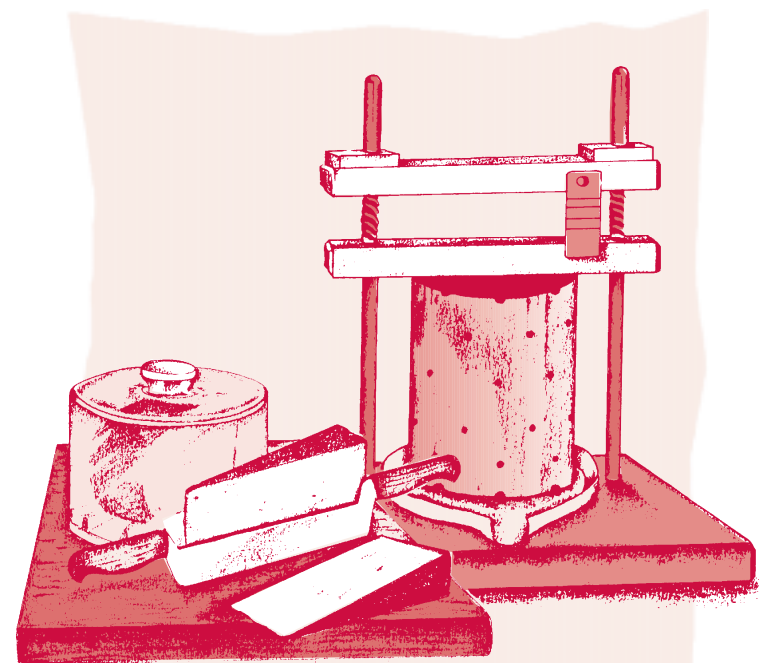
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A-57

MAKING CHEESE, BUTTER & YOGURT

PHYLLIS HOBSON



A Storey Country Wisdom Bulletin

*The mission of Storey Communications is to serve our customers
by publishing practical information that encourages personal
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Making Cheese, Butter, & Yogurt

by Phyllis Hobson

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Introduction

If you have a couple of goats or a cow on your homestead (and if you do not you are missing one of the most satisfying aspects of country life), you are sure to find yourself with several gallons of surplus milk on hand. Few families, even those with several milk drinkers, can keep up with the output of a good cow on green pasture, and most goats will average a gallon of milk a day during the summer months.

You can make butter and buttermilk, of course, or you can make yogurt; you can freeze packages of butter or cartons of whole milk for the less bountiful winter months; you may even want to can the milk.

But the best solution to a surplus of milk is cheese — the most delicious, nutritious method of preserving milk yet devised. This bulletin (this material was taken from *Making Homemade Cheese & Butter* by Phyllis Hobson, Storey Books) tells you how to make your own cheeses, butter, and yogurt.

Even if you do not have a cow or goats of your own, chances are good that you can find a source of fresh milk from a farmer or at a dairy where you can buy raw milk that is free from chemicals. During the summer months, when the animals are eating lush pasture and the milk is plentiful, you often can buy milk at a lower price.

Not only is homemade cheese cheaper than supermarket cheese, it is better tasting and better for you because there are no preservatives in it. If you are a vegetarian, you will be happy to know that you can make your own cheese with an all-vegetable rennet.

Cheese contains all the nutrients of milk in concentrated form. One pound of hard cheese contains most of the protein, calcium, riboflavin, and vitamin A of a gallon of milk. In addition, the curing process increases the B vitamins.

It is not feasible to make cheese in very small batches because the curing process is not satisfactory in cheese less than a pound in size. You may have to save up for a week or more to have surplus milk to make a batch of cheese, but this works out well if you keep the milk refrigerated.

However, once you get used to the idea of working with 3 or 4 gallons of milk, making cheese in these quantities is a simple

process easily adapted to the kitchen. Few ingredients are needed, and most of the necessary equipment is already on hand. The rest can be built in the home workshop.

The instructions for making cheese sound complicated, but the process is really much simpler than baking a cake. For each recipe read the Basic Directions through first, then read the specific recipe. Read each step carefully as you go. With only a little practice you can become an expert at making cheese.

As you gain confidence, you will learn the variables of cheese making — the degree of ripening of the milk and its effect on the flavor, the length of time the curd is heated and how that affects the texture, the amount of salt, the number of bricks used in pressing and the effect on moisture content, and how long the cheese is cured for sharpness of taste. All of these variables affect the finished product and produce the many varieties of flavor and texture. The more you learn about it, the more fascinating cheese making will become.



Kinds of Cheese

There are basically three kinds of cheese: hard, soft, and cottage.

Hard cheese is the curd of milk (the white, solid portion) separated from the whey (the watery, clear liquid). Once separated, the curd is pressed into a solid cake and aged for flavor. Well-pressed, well-aged cheese, will keep for months. Most hard cheeses can be eaten immediately but are better flavored if they are aged. The longer the aging period, the sharper the flavor. The heavier the pressing weight, the harder the texture. Hard cheese is best when made of whole milk.

Soft cheese is made the same way as hard cheese, but it is pressed just briefly. It is not paraffined and is aged a short time or not at all. Most soft cheeses can be eaten immediately and are best eaten within a few weeks. Cheeses such as Camembert, Gorgonzola, and Roquefort are soft cheese which have been put aside to cure. They do not keep as long as hard cheese because of their higher moisture content. Soft cheese may be made of whole or skim milk.

Cottage cheese is a soft cheese prepared from a high-moisture curd that is not allowed to cure. Commercially it usually is made of skim milk, but it can be made of whole milk. Cottage cheese is the simplest of all cheese to make.

Equipment

The list of equipment needed to make cheese is long; but do not let that scare you off. Improvise with your equipment. Most of the necessary utensils are already in your kitchen. A strainer can be made by punching holes in a restaurant-size can, but a colander or large sieve works best. A floating dairy thermometer works fine for cheese making, but almost any thermometer that can be immersed will do. A coffee can, a few boards, and a broomstick can be transformed into a cheese press.

Equipment

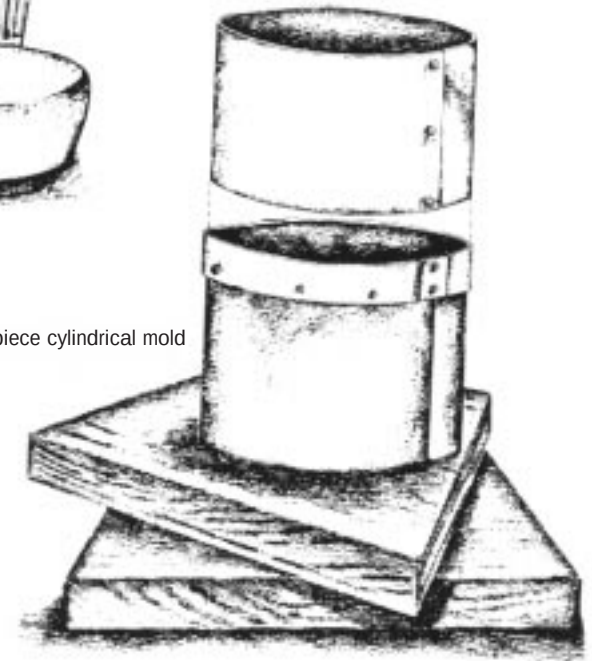
cheese form	thermometer	6 to 8 bricks
follower	long-handled spoon	1 pound paraffin
cheese press	large knife	
2 large pots	2 pieces of cheesecloth,	
strainer	1 square yard each	

French Pyramid mold



Plastic Brousse mold

Three-piece cylindrical mold



Cheese forms come in a variety of shapes.

Cheese Form

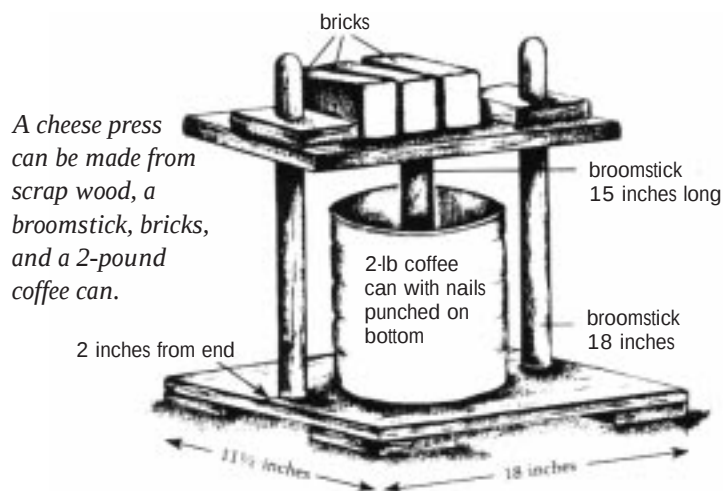
You can make your own cheese form from a 2-pound coffee can by punching nail holes in the bottom of the can. Be sure to punch the holes from the inside out so the rough edges are on the outside of the can and will not tear the cheese. The cheese form is lined with cheesecloth and filled with the wet curd, which then is covered with another piece of cheesecloth before the follower is inserted for pressing. The excess whey drains from the curd through the nail holes in the can. You can also buy cheese forms.

Follower

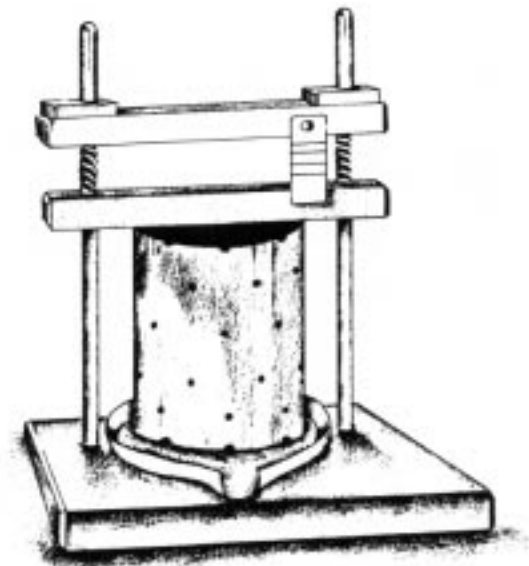
A follower is a circle of $\frac{1}{2}$ -inch plywood or a 1-inch board cut just enough smaller in diameter than the coffee can so that it can be inserted inside the can and moved up and down easily. The follower forces the wet curd down, forming a solid cake in the bottom of the can and squeezing out the whey.

Cheese Press

Cheese presses can be bought, substituted for by an old-fashioned lard press, or you can make your own in an afternoon with some scrap wood and a broomstick. (See illustration.)



To make your own cheese press, take a piece of $\frac{3}{4}$ -inch plywood or a 1-inch by 12-inch board and cut the wood to make 2 pieces about 11 $\frac{1}{2}$ inches by 18 inches each. Drill a hole about 1 inch in diameter in the center of one of the boards; whey will drain through this hole. In the other board, drill 2 holes, 1 inch in diameter each, 2 inches from each end. These holes should be just big enough so that the broomstick can move through them easily.



You can buy a cheese press for about \$170.

Cut the broomstick into 3 lengths: 2 pieces 18 inches long and 1 piece 15 inches long. Nail each 18-inch length of broomstick 2 inches from the ends of the bottom board, matching the holes in the top board. Nail the other length to the center of the top board, and nail the round follower to the broomstick at the other end. Nail 2 blocks of wood to the bottom or set the press on 2 bricks or blocks so that you can slide a container under the drainage hole to catch the whey (an ice cube tray works great).

The curd is poured into the cheesecloth-lined cheese form (coffee can) which is set on the press. The ends of the cheesecloth are folded over the curd. The follower is set in place, and the top board is weighed down with 1 or 2 bricks. The weighted follower exerts slow pressure on the cheese, forcing the whey out. Up to 4 bricks may be added later to make a firmer cheese.

Containers

For a container, I set a 24-quart hot-water canner inside a 36-quart canner, double-boiler style. I recommend them because they are lightweight (4 gallons of milk can get heavy), and they are porcelain enamel covered (aluminum is affected by the acid in the curd). The 24-quart canner holds 4 or more gallons of milk, is not too deep to cut the curd with a long-bladed knife (such as a bread knife), and is easily handled. These pots can be used at canning time to process tomatoes, peaches, and other acid fruits and vegetables.

Ingredients

To make cheese you need raw goats' or cows' milk, a starter, rennet, and salt. You can add color if you like your cheese bright orange color, but I prefer cheese in its natural, creamy white color.

Milk

Raw whole milk from goats or cows makes the richest cheese, but partially skimmed milk can be used. Preservatives are often added to milk that is labeled "pasteurized," so only raw milk can be used; otherwise, your milk may not form curds. Neither can you use powdered milk. For one thing, it has been over-processed; for another, skim milk makes a poor quality cheese.

Use fresh, high-quality milk from animals free from disease or udder infections. It is very important not to use milk from any animal that has been treated with an antibiotic for at least 3 days after the last treatment. A very small quantity of antibiotic in the milk will keep the acid from developing during the cheese making process.

The milk may be raw or pasteurized, held in the refrigerator for several days or used fresh from the animal. It must be warmed to room temperature, then held until it has developed some lactic acid (ripened) before you start to make the cheese. It should be only slightly acid tasting; more acid develops as the cheese is made.

It is best to use a mixture of evening and morning milk. Cool the evening milk to a temperature of 60°F and hold it at that temperature overnight. Otherwise it may develop too much acid. Cool the

morning milk to 60°F before mixing with the evening milk.

If you use only morning milk, cool it to 60 or 70°F and ripen it 3 or 4 hours. Otherwise it may not develop enough acid to produce the desired flavor and may have a weak body.

If you are milking 1 cow or only a few goats, you will have to save a mixture of morning and evening milk in the refrigerator until you have a surplus of 3 or 4 gallons.

When you are ready to make the cheese, select 10 or 12 quarts of your very best milk. Remember that poor quality milk makes poor quality cheese. Plan that 4 quarts of milk will make about 1 pound of hard cheese, slightly more soft cheese, or about 1 quart of cottage cheese.

Starter

Some type of starter is necessary to develop the proper amount of acid for good cheese flavor. Different starters will produce different tastes. You can buy buttermilk, yogurt, or a commercial powdered cheese starter, or you can make a tart homemade starter by holding 2 cups of fresh milk at room temperature for 12 to 24 hours, until it curdles, or clabbers.

A more complicated, but much more mellow, starter may be made by adding $\frac{1}{8}$ cake of yeast to 1 cup of warm milk and letting it stand for 24 hours. Then pour out half of it and add 1 cup of warm milk. Every day for the next 7 days, pour off half the mixture and add 1 cup of warm milk. Keep it in a warm place. At the end of a week, add the mixture to 2 cups of warm milk and let it stand for 24 hours. This is a cultured starter, and it is now ready to use.

If you make cheese regularly — we find our refrigerator filling up with milk about once a week — save 2 cups of clabbered milk from the start of each batch of cheese. Keep it covered in the refrigerator for no more than a week before using.

Rennet

Rennet is a commercial product made from the stomach lining of young animals. The enzyme action of rennet causes the milk to coagulate (curdle) in less than an hour, making the curd formation more predictable for cheese making. Rennet is available in extract or

tablet form from drug, grocery, or dairy supply stores. You can buy it in health food stores or in the special cheese making sections of gourmet food shops. Or you can order it by mail. Check the list of suppliers in the back of this bulletin.

Because natural rennet is of animal origin, many vegetarians prefer not to use it in making cheese. For that reason, a new, all-vegetable rennet is available in health food stores. But Grandmother made cheese without rennet of any kind.

To do so, let the milk clabber until a firm curd forms and the whey begins to separate. This means letting the milk set an extra 18 to 24 hours. Some people prefer the taste and texture of cottage cheese made without rennet, but in very warm weather watch that the milk does not spoil before it clabbers, and in winter weather it may take a long time to clabber.

Salt

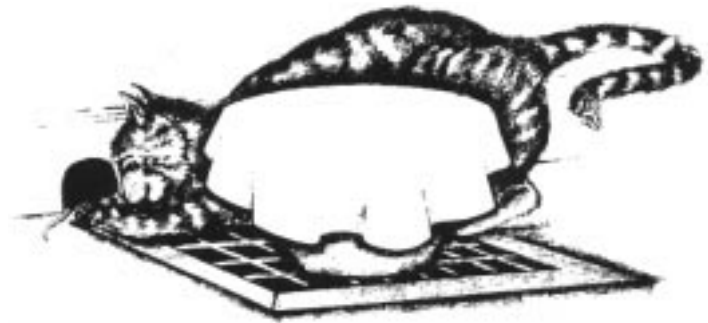
After you have made cheese a few times, you will learn the exact amount of salt that suits your taste, but some salt is needed for flavor. Our recipes call for a minimum amount. You can use ordinary table salt, but flake salt is absorbed faster Morton flake salt is available in some stores.

Basic Steps for Hard Cheese

1. Ripen the Milk. Warm the milk to 86°F and add 2 cups starter; stir thoroughly for 2 minutes to be sure it is well incorporated into the milk. Cover and let it set in a warm place, perhaps overnight. In the morning, taste the milk. If it has a slightly acid taste it is ready for the next step.

If you are not using rennet skip the next step and let the milk set 18 to 24 hours more, or until the curd has formed and whey is separating.

2. Add the Rennet. With the milk at room temperature, add ½ teaspoon rennet liquid or 1 rennet tablet dissolved in ½ cup cool water. Stir for 2 minutes to mix the rennet in thoroughly. Cover the container and let it remain undisturbed until the milk has coagulated — about 30 to 45 minutes.



To ripen milk, add 2 cups of starter to warmed milk, cover, and let it set in a warm place. Ripening the milk adds flavor to the cheese, and makes the milk acidic enough to discourage the growth of harmful forms of bacteria.

3. Cut the Curd. When the curd is firm and a small amount of whey appears on the surface, the curd is ready to be cut. With a clean knife, slice the curd into half-inch cubes. First slice through every half-inch lengthwise. Then slant the knife as much as possible and cut crosswise in the opposite direction. Rotate the pan a quarter turn and repeat. Stir the curd carefully with a wooden spoon or paddle and cut any cubes that do not conform to size. Stir carefully to prevent breaking the pieces of curd.

4. Heat the Curd. Place a small container into a larger one filled with warm water, double-boiler style, and heat the curds and whey slowly at the rate of 2 degrees every 5 minutes. Heat to a temperature of 100°F in 30 to 40 minutes, then hold at this temperature until the curd has developed the desired firmness. Keep stirring gently to prevent the cubes of curd from sticking together and forming lumps. As it becomes firmer, the curd will need less stirring to keep it from lumping.

Test the curd for firmness by squeezing a small handful gently, then releasing it quickly. If it breaks apart easily and shows very little tendency to stick together, it is ready. The curd should reach this stage 1½ to 2½ hours after you added the rennet to the milk.

It is very important that the curd be firm enough when you remove the whey. If it is not, the cheese may have a weak, pasty body and may develop a sour or undesirable flavor. If it is too firm, the cheese will be dry and weak-flavored.

When the curd is firm, remove the container from the warm water.

5. Remove the Whey. Pour the curd and whey into a large container which you have lined with cheesecloth. Then lift the cheesecloth with the curd inside and let it drain in a colander or large strainer. A 1-gallon can with drain holes is convenient for this step.

When most of the whey has drained off, remove the curd from the cheesecloth, put it in a container, and tilt it several times to remove any whey that drains from the curd. Stir occasionally to keep the curd as free from lumps as possible.

Stir the curd or work it with your hands to keep the curds separated. When it has cooled to 90°F, and has a rubbery texture that squeaks when you chew a small piece, it is ready to be salted.

Be sure to save the whey. It is very nutritious and is relished by livestock and household pets. We save the whey for our chickens and pigs, but many people enjoy drinking it or cooking with it.

6. Salt the Curd. Sprinkle 1 to 2 tablespoons of flake salt evenly throughout the curd and mix it in well. As soon as the salt has dissolved and you are sure the curd has cooled to 85°F, spoon the curd into the cheese form which has been lined, sides and bottom, with cheesecloth. Be sure the curd has cooled to 85°F.

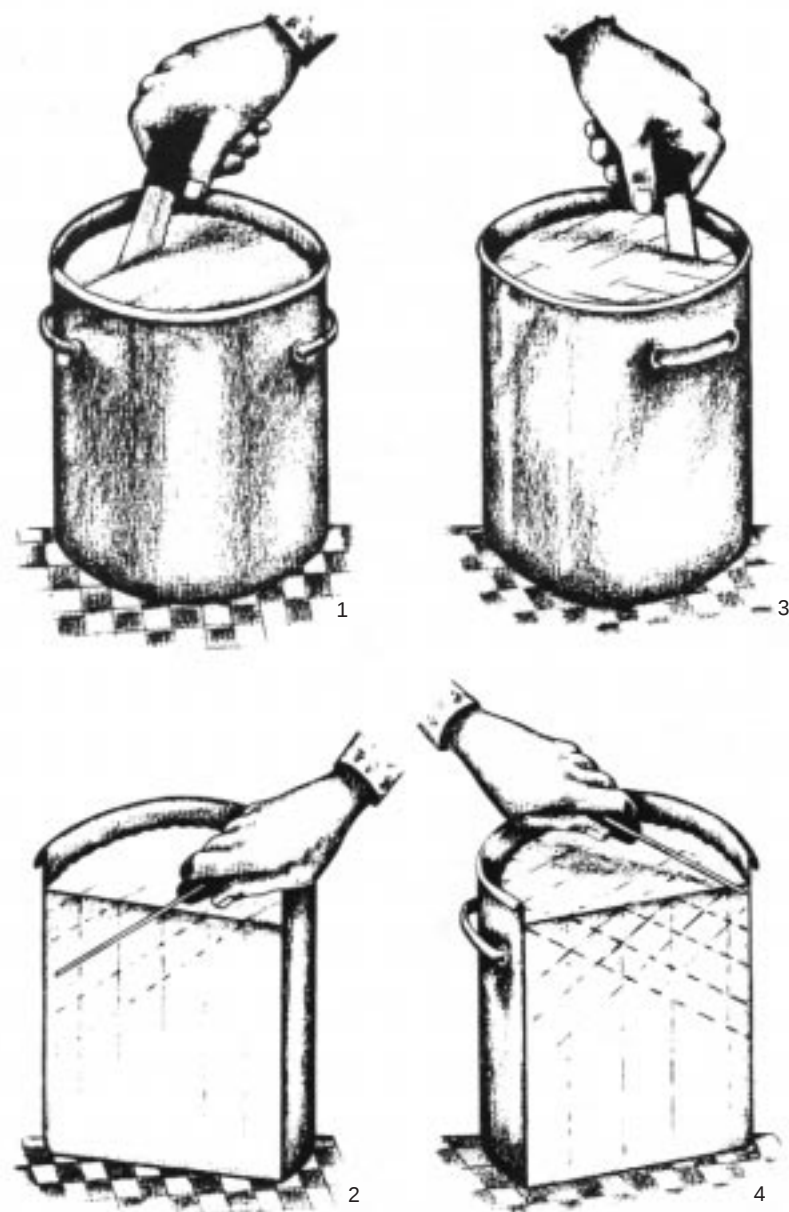
7. Press the Curd. After you have filled the cheese form with curd, place a circle of cheesecloth on top. Then insert the wooden follower and put the cheese form in the cheese press.

Start with a weight of 3 or 4 bricks or 10 minutes, remove the follower, and drain off any whey that has collected inside the can. Then replace the follower and add a brick at a time until you have 6 to 8 bricks pressing the cheese. When it has been under this much pressure for an hour, the cheese should be ready to dress.

Pressing is extremely important. If you want a hard, dry cheese, you will need 30 or more pounds of pressure for a 2½ to 3 pound cheese.

8. Dress the Cheese. Remove the weights and follower and turn the cheese form upside down so the cheese will drop. You may have to tug at the cheesecloth to get it started. Remove the cheesecloth from the cheese and dip cheese in warm water to remove any fat from the surface. With your fingers, smooth over any small holes or tears to make a smooth surface. Wipe dry.

Now cut a piece of cheesecloth 2 inches wider than the cheese is thick and long enough to wrap around it with a slight overlap. Roll the



To cut the curd, use a clean, long knife and slice the curd at half-inch intervals. Then slant the knife as much as possible and cut through the curd at a slant. Rotate the pan a quarter turn and repeat the pattern at right angles to the first cut.

cheese tightly using 2 round circles of cheesecloth to cover the ends.

Replace the cheese in the cheese form, insert the follower, and press with the 6 to 8 bricks another 18 to 24 hours.

9. Dry the Cheese. At the end of the pressing time, remove the cheese, take off the bandage, wipe the cheese with a clean, dry cloth, and check for any openings or cracks. Wash the cheese in hot water or whey for a firm rind. Seal the holes by dipping the cheese in warm water and smoothing with your fingers or a table knife.

Then put the cheese on a shelf in a cool, dry place. Turn and wipe it daily until the surface feels dry and the rind has started to form. This takes from 3 to 5 days.

10. Paraffin the Cheese. Heat ½ pound of paraffin to 210°F in a pie pan or disposable aluminum pan deep enough to immerse half the cheese at one time. Be sure to heat the paraffin over hot water — never over direct heat.

Hold the cheese in the hot paraffin for about 10 seconds. Remove and let harden a minute or so, then immerse the other half. Check to be sure the surface is covered completely.

11. Cure the Cheese. Now put the cheese back on the shelf to cure. Turn it daily. Wash and sun the shelf once a week. After about 6 weeks of curing at a temperature of 40 to 65°F, the cheese will have a firm body and a mild flavor. Cheese with a sharp flavor requires 3 to 5 months or longer curing. The lower the temperature the longer the time required. It's a good idea to test your first cheese for flavor from time to time during the curing period. One way is to cut the cheese into 4 equal parts before paraffining and use 1 of the pieces for tasting.

How long to cure depends on individual taste. As a rule Colby is aged 30 to 90 days and Cheddar 6 months or more. Romano is cured at least 5 months. Other cheeses are cured sometimes no more than 2 or 3 weeks. The cooler the temperature in the curing room, the longer it takes to ripen. Once you have the temperature and time to suit your taste, you will know exactly when your cheese will be ready.

Remember, these are *general* instructions to be used for hard cheese. When you follow the specific recipes, you will find many variations, particularly for processing temperatures and pressing times.

Recipes for Hard Cheese

LONGHORN

Add 2 cups of starter to 1½ gallons of warm raw mlk. Cover and set in a warm place 12 to 24 hours or until thick and clabbered. Follow the Basic Directions from Step 4, heating the curd through Step 7, pressing the cheese, omitting Step 6. Remove the cheese from the press, add 4 tablespoons of butter and ¾ teaspoon of baking soda. Chop until the curd is quite fine, and the butter and soda are thoroughly mixed in.

Press mixture down into a bowl or crock and let it stand in a warm place for 2½ hours. Then put the curds into a double boiler with ⅔ cup thick sour cream and 1¼ teaspoon salt, and heat slowly. As the mixture begins to heat, stir until all ingredients melt into a mass. Then pour it into a well-greased bowl and allow it to cool. It is ready to eat as soon as it is cold, but can be cured for 2 to 3 months.

CHEDDAR

There are several ways to make cheddar. To make my version, follow the Basic Directions through Step 5, removing the whey. Then place the dubs of heated curd in a colander and heat to 100°F. This may be done in the oven or in a double-boiler arrangement on top of the stove. It is important to keep the temperature between 95 and 100°F for 1½ hours.

After the first 20 to 30 minutes, the curd will form a solid mass. Then it should be sliced into 1-inch strips which must be turned with a wooden spoon every 15 minutes for even drying. Hold these strips at 100°F for 1 hour. Then remove from the heat and continue with the Basic Directions, beginning at Step 6, salting the curd. Cure for 6 months.

COLBY

To make a small colby cheese, add 3 tablespoons of starter to 1 gallon of lukewarm milk. Let it stand overnight to clabber, then proceed with the Basic Directions through Step 4, heating the curd.

When the curd is heated to the point where it no longer shows a

tendency to stick together, remove the container from the heat and let it stand 1 hour, stirring every 5 minutes.

Now continue with Step 6, removing the whey. After pressing the curd for 18 hours, the cheese can be dried a day or so and used as a soft cheese spread or ripened for 30 days.

CANTAL

Cantal is a hard, yellow cheese with a sharp flavor and a firm texture. To make it, follow the Basic Directions through Step 7, pressing the curd. Then remove the cheese from the cheese form, wipe it off, and allow it to cure for 24 hours.

Break the cheese into small pieces and work in 2 tablespoons of salt with your hands. After kneading it thoroughly, put it in the cheese form and press for 48 hours. Proceed with Basic Directions, omitting Step 10. Cure 3 to 6 months. While curing, the cheese should be washed every 3 or 4 days with salt water ($\frac{1}{4}$ cup salt to 1 quart warm water).

ROMANO

Romano is a hard, rather granular Italian cheese often used for grating. In this recipe, skimmed milk can be used.

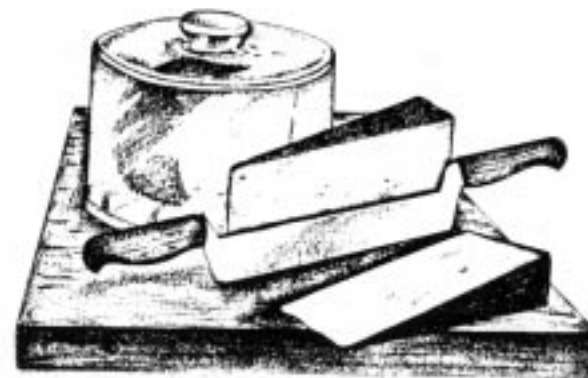
Follow the Basic Directions to Step 4, heating the curd. At this point, heat the cut curd slowly to 118°F and hold it at that temperature, stirring occasionally until the curd is quite firm (you can tell by touch or by tasting). Then proceed with Basic Directions to Step 7, pressing the curd. Follow the directions, pressing it for 18 hours. Then remove the cheese from the form and immerse the cheese in salt brine ($\frac{1}{4}$ cup salt dissolved in 1 quart warm water). Let it stand 2 to 3 hours.

During the first stages of the curing process, salt is rubbed on the surface. For a real Italian Romano appearance, color the paraffin black (with crayon) and rub the surface of the paraffined cheese with olive oil at the end of the curing period.

Romano is cured for 5 to 8 months for slicing and 1 to 2 years for grating.

TELEMÉ

Telemé is a pickled cheese made from goats' or ewes' milk. To make it, follow the Basic Directions through Step 7, pressing the curd, but omit Step 6, salting the curd. Press the curd 1 to 2 hours, then remove it from the cheese form, cut it into cubes, and immerse the curd in salt brine ($\frac{1}{4}$ cup salt dissolved in 1 quart warm water). Leave it covered in the brine for 24 hours. Then drain the cubes, wipe dry, and again press it in the cheese form for 18 hours. The cheese is cured in diluted salt brine ($\frac{1}{4}$ cup salt to 2 quarts warm water) for 8 to 10 days. The cured cheese is white and creamy.



MOZZARELLA

Mozzarella is a delicate, semi-hard Italian cheese which is not cured but is used fresh. It often is used in Italian dishes.

Follow the Basic Directions to Step 3, cutting the curd. Instead of cutting the curd with a knife, break it up with your hands. Heat the curd to as hot as your hands can stand. Then stir and crumble it until the curds are firm enough to squeak.

Proceed with the Basic Directions at Step 5, removing the whey, and continue to Step 8, dressing the cheese. At this point, remove the pressed cheese from the cheese form and discard cheesecloth wrapping. Set the cheese in the whey which has been heated to 180°F. Cover the container and let stand until cool.

When cool, remove the cheese from the whey and let drain for 24 hours. The cheese is now ready to eat or use in recipes.

FETA

Feta is a white, pickled cheese made from goats' or ewes' milk. To make this salt-cured cheese, follow the Basic Directions through Step 3, cutting the curd. In the next step the curd is heated to no more than 95°F and drained when less firm than most hard cheeses.

To remove the whey, the curds and whey are poured into a cloth bag which is hung for 48 hours until the cheese is firm. Feta is not pressed in a cheese form. When firm, the curd is sliced and sprinkled with dry salt, which is worked in with the hands. The cheese is then returned to the cloth bag which is twisted and worked to expel most of the whey and firm the cheese. After 24 hours, the cheese is wiped off and placed on a shelf to form a rind. It is ready to eat in 3 to 4 days.

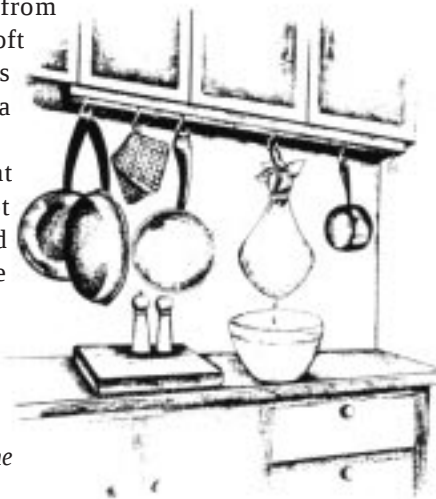
Recipes for Soft Cheeses

Soft cheeses usually are mild and aged little, if at all. They do not keep as long as hard cheese. Soft cheeses are not paraffined, but are wrapped in wax paper and stored in the refrigerator until used. Except for a few soft cheeses that are aged, they should be eaten within a week or so for best flavor.

The simplest soft cheese is fresh curds, which Grandmother made by setting fresh warm milk in the sun until the curds separated from the whey. The most familiar soft cheese is cream cheese which is made by draining curds for a few minutes in a cloth bag.

If you gather from this that the making of soft cheese is not nearly as complicated as hard cheese, you are right. Here are some of the simplest recipes.

Many of the soft cheese are not pressed. Instead, the curds are hung in a cloth bag from which the whey drains.



SWEET CHEESE

Bring 1 gallon of whole milk to a boil. Cool to lukewarm and add 1 pint of buttermilk and 3 well-beaten eggs. Stir gently for 1 minute, then let set until a firm clabber forms. Drain in a cloth bag until firm. The cheese will be ready to eat in 12 hours.

CREAM CHEESE

Add 1 cup of starter to 2 cups of warm milk, and let it set 24 hours. Add to 2 quarts of warm milk and let it clabber another 24 hours. Warm over hot water for 30 minutes, then pour into a cloth bag to drain. Let it set one hour. Salt to taste and wrap in waxed paper. It may be used immediately for sandwiches, on crackers, or in recipes calling for cream cheese. Refrigerate until used.

Another method of making cream cheese is to add 1 tablespoon of salt to 1 quart of thick sour cream. Place in a drain bag and hang in a cool place to drain for 3 days.

ENGLISH CREAM CHEESE

Pour 1 quart of cream in the top of a double boiler. Add hot water to the bottom pan. Slowly heat the cream almost to the boiling point. Remove from the heat and add 1 rennet tablet dissolved in 1 tablespoon cold milk. Stir well and let it stand until it thickens, then break the curds slightly with a spoon and pour into a drain bag. Let the curds drain for 24 hours, then press in a cheese press under a light weight for another 24 hours. Remove from press, wrap in cheese-cloth, and rub flake salt over the cloth. Hang to dry 1 or 2 days before slicing.

KRAUTT CHEESE

Krautt is made by clabbering skimmed milk, adding salt, then hanging the curd in a cloth bag to drain. It is sometimes pressed for 1 to 2 hours. Then the curds are formed into small cheese balls by hand. These are dried in the sun all afternoon, then stored in the refrigerator. It is best eaten within a week.

NEUFCHATEL

Cool 1 gallon of freshly drawn milk or heat refrigerated milk to 75°F. Add ⅓ cup of sour milk or starter. Stir for 1 minute, then add half a rennet tablet dissolved in ¼ cup cool water. Stir again for 1 minute. Let it set undisturbed in a warm place (about 75°F) for 18 hours.

At the end of that time, dip off the whey on the surface of the curd. Then put the curd into a cheesecloth bag and hang it in a cool place to drain. When the curd appears dry, place it in a bowl and salt to taste. Mix in salt thoroughly.

Ladle the salted curd into a cheesecloth-lined cheese form, press smooth with a spoon, and top with a layer of cheesecloth. Insert the wooden follower and apply pressure (6 bricks). The length of time required to press the cheese into a cake suitable for slicing varies according to the temperature, the amount of moisture, and the weight applied, but it is usually from 45 minutes to 1½ hours. When the cheese is firm enough to cut, it is ready to eat. It is best fresh but will keep a week or more in the refrigerator.

CHEESE SPREAD

Let 2½ gallons of skimmed milk sour until thick. Heat very slowly until it is hot to the touch; do not allow to boil. Hold the milk at this temperature until the curds and whey separate. Strain through cheesecloth and allow the curds to cool a little, then crumble with your hands. Makes 4 cups crumbled cheese. Let it set at room temperature 2 to 3 days to age.

To the 4 cups crumbled curds, add 2 teaspoons of soda and mix in with your hands. Let it set 30 minutes. Add 1½ cups of warm milk, 2 teaspoons of salt, and ⅓ cup of butter. Set over boiling water and heat to the boiling point, stirring vigorously. Add 1 cup of cream or milk, a little at a time, stirring after each addition. Cook until smooth. Stir occasionally until cold. Makes 1½ quarts of cheese spread.

To make a flavored cheese spread, add 3 tablespoons of crumbled bits of crisply fried bacon, or 1 tablespoon of chopped chives, or 4 tablespoons of chopped, drained pineapple.

MONT D'OR

Heat whole or partially skimmed milk to 90 to 100°F, add rennet, cut, and press in a cheese form. The cheese is salted on the surface and eaten without curing.

SCHMIERKJÄSE

Pour 4 quarts of boiling water into 4 quarts of thick, sour milk. Let it stand for a moment, then turn it into a drain bag and hang aside overnight. When ready to serve, beat well, season with salt and pepper, and add cream to taste. Serve as a spoon cheese or make it into cheese balls.

DUTCH CHEESE

Set a pan of curded milk on the back of a wood-burning stove and heat very slowly until the curd is separated from the whey. Drain off the whey and pour the curd into a drain bag. Hang and let it drain for 24 hours. Chop the ball of curd and pound until smooth with a potato masher or round-end glass. Add cream, butter, salt, and pepper to taste. Make into small balls, or press in a dish and slice to serve.

GERMAN CHEESE

Put 2 gallons of clabbered milk in an iron pot over low heat and bring it to 180°F in 45 minutes. Drain off the whey and put the curds in a colander. When the curds are cool enough to handle, press it with your hands to extract any remaining whey. The warmer you work it the better. Put the drained curd in a dish and add 2 teaspoons of soda and 1 teaspoon of salt, working in well with your hands. Press the curd with your hands to form a loaf. Let it set for 1 hour, when it will have risen and be ready to slice. It will keep several days in a cool place.

If the cheese is dry and crumbly it may have been heated too much or pressed too long. If it is soft and sticky it was not heated enough or not pressed enough.

EGG CHEESE

Over medium heat bring 1 gallon of sweet milk to a boil. Meanwhile, in a bowl, beat 6 eggs well, then add 2 cups of clabbered milk and ½ teaspoon salt. Add this mixture to the milk which has come to a boil and again bring to a boil. When the milk and eggs separate, pour into a drain bag and hang to drain for several hours. It can be eaten after 8 to 10 hours.

Another method is to take 2 gallons of clabbered milk and add 1 gallon of sweet milk and 6 well-beaten eggs. Salt to taste and heat over a low fire until it curdles. Drain for several hours, then press in a cheese press 24 hours. Slice to serve.

SCAMORZE

Scamorze is a soft, whole milk cheese that is eaten fresh. Take cream skimmed from the evening milk and mix it with morning milk. Warm the milk to 98°F, then cool it to 80°F. Add starter, then rennet, and mix thoroughly.

When the curd has set, cut it into half-inch cubes and heat until the curd settles to the bottom of the container. Pour off the whey and drain the curd until it is firm. Heat the whey to 122°F, and pour it back over the curd. Knead and stretch the curd until it is smooth and cohesive and will form long threads when stretched. Return the whey to low heat and heat it to 140°F while the curd is kneaded and stretched until it is smooth and cohesive and will form long threads when stretched. Remove the curd from the whey and cut it into thin slices while reheating the whey to 180°F. Then pour the whey over the slices of curd and knead and press the curd with a paddle while it is immersed in the whey. Again stretch it by hand or with the paddle until it is very elastic. Again remove the curd from the whey. Divide it into round balls the size of lemons while again reheating the whey to 180°F. Remove the whey from the heat and drop in the small cheeses. As the whey cools, shape the cheese by hand. When the whey is cold, remove the cheeses, wipe dry, and dip in salt water (¼ cup salt to 1 quart water) and dry a few hours. Then store in the refrigerator until you are ready to use them.

RIESENGBIRGE

Riesengebirge is made from goats' milk. Heat the milk to 90°F and add rennet. Break up the curd that forms and dip off the whey. Set the curd in a cheese form and allow it to drain for 24 hours. Then remove the cheese from the form, salt the surface of the cheese, and allow it to dry for 3 or 4 days. Then set it in the refrigerator to cure for 1 to 2 weeks. Wrap it and store in a refrigerator until you are ready to use it.

GAISKASLI

Gaiskasli is a soft cheese that is usually made from goats' milk. Add 1 or 2 dissolved rennet tablets or 1 teaspoon of rennet liquid to 2 to 3 gallons of fresh milk. Let it set for 40 minutes, until it coagulates. Then break up the curd, stir, and dip it into small tin cans which have the bottoms and sides perforated with holes. Set the cans on a rack so the cheese curd can drain freely and sprinkle salt on top. After 2 days, remove the cheese from the cans, reinsert it top-end first in the cans, and sprinkle with salt again. This cheese cures in about 3 weeks in the refrigerator.

CHEESE BALLS

To each pint of drained curd, add 2 ounces of melted butter, 1 teaspoon salt, a dash of pepper, and 2 tablespoons thick cream. Work together until smooth and soft. Make into small balls to serve with salad.

Cottage Cheese

Cottage cheese may be eaten as a spoon cheese or strained (or put through a blender) and used as a low calorie dip or in recipes calling for sour cream. It is best eaten as soon as it is chilled, but it will keep up to a week in the refrigerator.

Homemade cottage cheese does not contain preservatives, so it does not keep as long as the commercial variety usually does.

Method 1

Bring 1 gallon of whole or skimmed milk to 75 to 80°F and add 1 cup of starter. Cover and set in a warm place 12 to 24 hours or until a firm clabber forms and a little whey appears on the surface.

When a clabber is formed, cut into half-inch cubes by passing a long knife through it lengthwise and crosswise. Then set the container in a larger pot containing warm water. Warm the curd to 110°F, stirring often to keep it from sticking together. Be careful that you do not overheat.

When the curd reaches the proper temperature, taste it from time to time to test for firmness. When it feels firm enough to your liking (some people like their cottage cheese rather soft; others like it quite firm and granular), immediately pour it into a colander lined with cheesecloth, and drain for 2 minutes. Lift the cheesecloth from the colander and hold under tepid water, gradually running it colder, to rinse off the whey. Place the chilled curd in a dish, add salt and cream to taste, and chill thoroughly before serving.

Method 2

Add 1 cup of starter to 1 gallon of freshly drawn milk. Cover and set in a warm place overnight. In the morning, add half a rennet tablet dissolved in ½ cup of water. Stir 1 minute. Cover again and let it stand undisturbed for 45 minutes. Cut the curd into half-inch cubes, set the container in a larger pot of warm water, and warm the curd to 102°F. Proceed as in Method 1, once the curd has reached the desired temperature and firmness.

Method 3

Add 1 cup of starter to 2 gallons of warm skimmed milk. Stir well and pour into a large roaster pan with a lid. Place in a warm (90°F) oven (heat off) overnight or for about 12 hours. In the morning take out 1 pint of the clabbered milk and refrigerate it to use as a starter for the next batch. Turn on the oven and set at 100°F. Heat the clabber in the oven for 1 hour, then cut into half-inch cubes. Do not stir or move pan unnecessarily. Leave the milk in the oven until the curds and whey are well separated. When the curd rises to the top of the whey, turn the heat off and let it set until cool. Dip off excess whey; then dip out curds and put them into a cheesecloth-lined colander to drain. Pour curds into a dish and add salt and cream to taste.

Method 4

Heat 1 quart of sour milk in the upper part of a double boiler over hot water. Heat until lukewarm, then line a large strainer with cheesecloth dipped in hot water and pour in the milk. Over the milk pour 1 quart warm water. When the water has drained off, pour another quart of warm water over the milk. Repeat. When the water has drained off for the third time, gather the ends of the cheesecloth to form a bag and hang to drain overnight. Add salt to taste.

Method 5

Pour 2 quarts of clabbered milk into a large pan. Into it slowly pour boiling water, continuing until the curds start to form in the milk. Let set until the curds may be skimmed from the top. Mix curds with cream. Salt lightly.

SWEET MILK COTTAGE CHEESE

Heat 2 quarts of milk to lukewarm. Dissolve 2 rennet tablets in 2 tablespoons of cold water and add to milk. Stir two minutes. Let it stand undisturbed in a warm place until set, about 1 hour. Pour into a drain bag and let it drain 3 to 4 hours. Remove from bag and break into fine pieces. Moisten with cream and season with salt and pepper to taste.

SOUR MILK COTTAGE CHEESE

Pour 2 quarts of sour milk into a double boiler. Heat over warm water until a soft curd is formed. Pour into a drain bag and let drain. After 3 to 4 hours, remove cheese from bag, break into pieces, and moisten with cream. Season with salt and pepper.

COTTAGE CHEESE WITHOUT HEATING

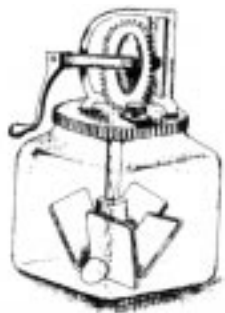
Add 1 teaspoon of salt and 1 crushed, dissolved rennet tablet to 1 quart lukewarm sweet milk. Stir thoroughly. Let stand in a warm place until set. Beat with a fork to break the curd, then turn into a drain bag and let it hang until the liquid has drained from the curd. Moisten with cream and season with pepper.

Making Butter

Butter can be made from sweet or sour cream in a variety of equipment ranging from an electric mixer or blender to a plain glass jar with a tight-fitting lid.

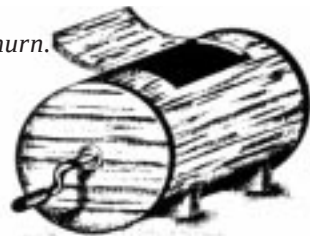
If you make butter often, you may want to buy a churn. They vary from the large, old-fashioned, wooden-barrel churns which will accommodate up to 5 gallons of cream to the small, glass-jar, wooden-paddle churns that are still sold by Sears, Roebuck in hand-operated or electric models.

Sweet cream butter takes longer to churn than sour cream butter. If the cream is very fresh it may take several hours to turn to butter. Sour cream churns into butter in 30 to 35 minutes. Both sweet and sour cream churns quicker if they have been aged 2 to 3 days in the refrigerator. Sweet cream butter is sometimes preferred for its mellow, bland flavor. Sour cream butter has a richer taste.



Forerunner to the electric butte churn.

Barrel churn.



SWEET CREAM BUTTER

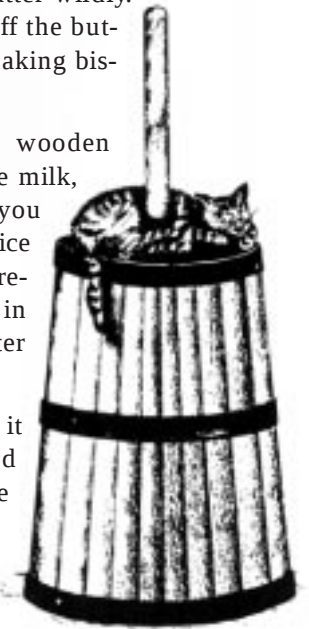
If you make butter once a week from the cream accumulated during the week, it will give the cream time to ripen a little, which improves the taste and makes it easier to whip. Or leave the cream a day or so at room temperature until it begins to clabber.

Pour the cold, heavy cream into a chilled mixing bowl. Turn the mixer slowly to high speed and let the cream go through the stages of whipped cream, stiff whipped cream, and finally two separate products — butter and buttermilk. In a churn, turn slowly for 15 to 20 minutes. It is only during the last stage as the butter separates from the buttermilk, that the process needs attention. Then you must turn the speed to low or it will spatter wildly. When the separation has taken place, pour off the buttermilk. (Save the buttermilk. It's great for making biscuits or pancakes or to drink.)

Now knead the soft butter with a wet wooden spoon or a rubber scraper to force out all the milk, pouring the milk off as you knead. When you have all the milk out, refill the bowl with ice water and continue kneading to wash the remaining milk from the butter. (Any milk left in will cause the butter to spoil.) Pour off the water and repeat until the water is clear.

You now have sweet butter. If you want it salted, add a teaspoon of flake salt. Uncolored butter may be an appetizing cream white color, but if you want it bright yellow, you can add butter color.

One quart of well-separated, heavy cream makes about one pound of butter, and about a half quart of buttermilk.



SOUR CREAM BUTTER

Ripen cream by adding ¼ cup of starter to each quart of heavy cream. Let it set at room temperature for 24 hours, stirring occasionally. Chill the ripened cream 2 to 3 hours before churning.

When it is chilled, pour the cream into a wooden barrel or glass-jar churn. If desired, add butter coloring at this point. Keep the cream and the churn cool and turn the mechanism with a moderately fast, uniform motion. About 30 to 35 minutes of churning usually will bring butter, but the age of the cream, the temperature, and whether the cream is from a morning or a night milking will affect the length of time required.

When the butter is in grains the size of wheat, draw off the buttermilk and add very cold water. Churn slowly for 1 minute, then draw off the water.

Remove the butter to a wooden bowl and sprinkle it with 2 tablespoons of flake salt for each pound of butter. Let stand a few minutes, then work with a wooden paddle to work out any remaining buttermilk or water, and mix in the salt. Taste. If the butter is too salty, wash with cold water. If it needs it, add more salt.

While working, keep the butter cold. If it should become too soft during hot weather, chill the butter until it hardens before finishing.

Yogurt

Making yogurt essentially is the same as making cheese starter. The milk is warmed to 100 to 110°F, the culture is added, and the mixture is kept at the desired temperature for several hours. At about 100°F you can make yogurt in 5 to 6 hours, but you can leave it 10 to 12 hours if like a tarter flavor.

It is important to keep the mixture at the proper temperature for the necessary length of time in order to allow the culture to develop. If you have a yogurt maker, simply follow the manufacturer's directions. If you don't use your ingenuity.

With a Thermos

Almost fill a thermos (preferably wide mouth) bottle with warm (100°F) milk. Add 2 tablespoons of plain yogurt and mix thoroughly. Put the lid on and wrap the thermos in 2 or 3 terry towels. Then set in a warm, draft-free place overnight. (On winter nights, over the furnace register is a good place.)

In an Oven

Pour 1 quart of warm milk in a casserole dish and add 3 tablespoons of plain yogurt. Stir well and cover casserole. Place in warm (100°F) oven with the heat off. Let it set overnight.

On a Heating Pad

Set an electric heating pad at medium temperature and place in the bottom of a cardboard box with a lid. (A large shoe box works well.) Fill small plastic containers with warm milk, add yogurt starter to each, and mix well. Put on lids. Wrap heating pad around containers, then cover with towels to fill box. Put lid on box and let set undisturbed for 5 to 6 hours.

In the Sun

Pour warmed milk into a glass-lidded bowl or casserole. Add yogurt starter and cover with the glass lid or a clear glass pie plate. Place in the sun on a warm (not too hot) summer day and let set 4 to 5 hours. Watch it to make sure it is not shaded as the sun moves.

On the Back of the Stove

Grandmother made her clabber by setting a bowl of freshly drawn milk on the back of the stove after supper. She added 1 cup of starter to each 2 quarts of milk and let it set, loosely covered with a dish towel, on the back of the cooling wood range overnight. If you are fortunate enough to have a wood range in your kitchen this method works beautifully.

Whey

Whey has come protein and B vitamins but is inferior to milk in both taste and nutrition. My own preference is to feed whey to pets and livestock. Some people use it in soups, stews, and as a milk substitute in baking. It is my feeling that whey adds an undesirable yeasty flavor.

Here are two recipes you might try, if you find you hate to throw whey away.

BROWN WHEY CHEESE

After making cottage cheese, put the whey over low heat to simmer until it reaches the consistency of thick cream. Remove, stir, and store in small glass jars in the refrigerator. Spread on bread or crackers or use as a dressing on salad.

WHEY LEMONADE

Strain 1 quart of whey left after making cheese. Add 6 tablespoons of sugar and the juice of 2 lemons. Chill.

Ways to Preserve Milk

During the summer months when the grass is lush and green and our milk runneth over, we preserve some milk for winter use.

Canning

Wash and rinse pint-size canning jars. Immerse them in hot water and bring to a boil. Cover and boil 10 minutes. Fill the hot jars within 1 inch of the top with milk that has been heated to just below the boiling point. Be careful since milk scorches easily. Top the jars with caps according to manufacturer's directions and place in a hot-water canning kettle (not a pressure canner). Pour warm water over the jars. Be sure the water is at least 2 inches above the tops of the jars. Keep the water boiling for 3 hours. At the end of that time, turn the heat off and allow the water to cool somewhat before removing the jars. While the canner is processing, keep extra boiling water on

the stove to replace any boiled away in the canner. Keep boiling water 2 inches over the jars at all times.

Canned milk will keep over the winter. It tastes somewhat like condensed milk only it is not as thick. Canned goats' milk may have a strong flavor.

Freezing

When we freeze, we use the half-gallon dairy milk cartons which our city friends save for us in exchange for a few fresh country eggs. We fill them almost to the fold mark and staple the tops shut. If used within a month or two the milk is almost as good as fresh. After that time, it tends to curdle and separate, which affects the texture, but not the taste. Sometimes we run it through the blender and drink it but usually we drink what fresh milk we get and cook with the thawed frozen milk.

Cheese Making Supplies

You can buy cheese making supplies from the following companies. Write for their catalogs.

Chr. Hansen's Laboratories, Inc.

9015 Maple St.
Milwaukee, WI 53214

Lehman's Hardware

P.O. Box 41
Kidron, OH 44636
(330) 857-5757
info@lehmans.com

New England Cheesemaking Supply Company

P.O. Box 85
Ashfield, MA 01330

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